

IN THE SPECIFICATION:

Please rewrite the sixth paragraph on page 2, which starts "Brief description of the accompanying drawings" as follows:

Brief description of the accompanying drawings

Fig. 1a. Information storage in DNA. Structure of prototypical single segment information storage in DNA strand.

Fig. 1b. Information storage in DNA. Structure of prototypical multi segment information storage in DNA strand.

Fig. 2. Encryption of extended ASCII character set in terms of DNA bases

Fig.3. Encryption Key. Extended ASCII characters in terms of DNA strands

Fig. 4 is a process sheet for encryption and storage showing the encoding of digital information for "WELCOME" using the DNA sequence

TTAGTACATAGCTATGTACCTAACTACA (SEQ ID NO: 5) and the following primers:

Header Primer: ATTATATATATATTATAT (SEQ ID NO: 8)

Terminating Primer: TTTATATATATATTATT (SEQ ID NO: 9)

Continued Tail Primer: TTTATATATATATTACCC (SEQ ID NO: 10).

Fig. 5 provides a process summary for encryption and decryption of digital information for "WELCOME" using the DNA sequence of SEQ ID NO: 5 and the header primers of SEQ ID NO: 8.

Fig.4. Process sheet for encryption & storage

Fig.5. Process summary

Please replace the second paragraph from the end of page 4, which starts "b)

The input information" with the following:

b) The input information is then encrypted character-by-character using array generated in step 1. The basis is ASCII values of each character is matched with the element no. of the array of step 1.

Encryption of the text "CSIR" in terms of DNA bases may be:

TATGTTCTATTTAC (SEQ ID NO: 5) where:

C is represented by DNA sequence TATG

S is represented by DNA sequence TTTC

I is represented by DNA sequence TATT

R is represented by DNA sequence TTAC

Please replace the fourth paragraph on page 5, which starts "g) The encrypted

DNA" with the following:

g) The encrypted DNA can then be transported on paper, cloths, buttons or through any other medium.

Isolation decryption of above encrypted DNA sequence **TATGTTCTATTTAC** (SEQ ID NO: 1):

Please replace the seventh paragraph on page 5, which starts "c) Obtained sequence is" with the following:

c) Obtained sequence is interpreted (integrated if multi-segment before interpretation) using DNASTORE software. The basis for retrieval is a string of 4-bases each at a time is taken and matched with array as generated in step 1 of encryption and storage. The element number of matching value is taken and converted to its ASCII equivalent.

If the retrieved sequence is TATGTTCTATTTAC (SEQ ID NO:1). The Decryption would be:

first 4-bases i.e. "TATG" would be in the array storage and encryption 67 = C

next 4-bases i.e. "TTTC" would be in the array of storage and encryption 83 = S

next 4-bases i.e. "TATT" would be in the array storage and encryption 73 = I

next 4-bases i.e. "TTAC" would be in the array of encryption 67 = R

Integration of above decrypted values in the same sequence as retrieved is "CSIR".

Please replace the first paragraph on page 6, which starts "Example 2. Some examples" with the following:

Example 2. Some examples of DNA encryption for textual data

Digital Information Encrypted DNA sequence

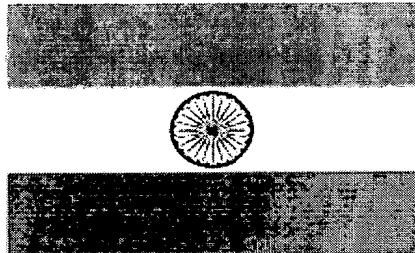
WELCOME

TTAGTACATAGCTATGTACCTAACTACA (SEQ ID NO:2)

WORLD PEACE	TTAGTACCTTACTAGCTATAAGCTTCCTACATAGG TATGTACA (<u>SEQ ID NO:3</u>)
INDIA	TATTTATCTATATATTAGG (<u>SEQ ID NO: 4</u>)
CSIR	TATGTTCTATTTAC (<u>SEQ ID NO:5</u>)
CSIO	TATGTTCTATTTACC (<u>SEQ ID NO:6</u>)

Please replace the paragraph bridging pages 6 through 13, which starts, “Example 3. A JPEG image encrypted” with the following:

Digital Information



Encrypted DNA sequence

TAAATATTTAGAAAACAATCTCGTGGCGATC
GCGCCATCGGCTAACCTATCGATCGCTGGT
CGCGTATCAACAATCGTCGGTCGGCGC
CCTACGGGCTTCTCGAACCCCGTAGGCGAC
ACGGCGCGGCGGATGATTGTCGCCTTGCTA
CCCGTGGTGCAGCCAGACCTTCGACGCTCC
TGGTACCTGCGCCTCATCGTTATCTTGTTG
GAGTGCAAGATGGAGAGTTCCGGACGGG
TAGCAAGCCTGCGTAATATCTCAAATGTCC
AAAGCTTATTGTTTCAATAACGTGATCCTT
ACCTGCACATTAGTATTATCACCAGCGTGCA
CCCATGCGGGCGCCAACCTTGCTGGACTTC
GACGCCGCTGTCGTTGCCCTCTGAGTGAAT
GATTGTGCCACTGTGGTGGGGCGCCTAGT
CGGTCGGTCGAGGTGTTCATTAATGGATCG
ATCGACCTATCGAGGAATCGATCGATCGAT

CGGGCGATCGCGCCATCGATCGATCAGTCG
TCCTACGCCGGCTCTCTCTGCATTCAGCTC
GCTTATCGAGAGGGCCTGTGCAAGGAGCCCT
GTTACATTGGGCTATCTAAGACATGGGGAC
AGTCGGCCGACAGAGTATAATAGGAACCAC
GCCTAATGGATAACAGCTTCGAAACCCAC
TCCAGAGCCTGTTACTCTAATTGGCTCCG
GGGCTGATGGTGAGGGCTGTGAACCCGGA
CTCCCAGCCTAGGGAGTACAGACCATGATC
CCTATGCCGGATTAGCCCTAGGCTGTCACA
CTAAGCTATCCTCAGCGTGAGCGTGTCCGG
ACTTCGCAGGCTGTGCGTCTTGAGTGCACG
AGTGGACGGGCGTGCAGGATCCGCGCACGA
ACGCTTCGTCGTTGGTCGTCTCACGACC
GCCCAACTTCCAGCCATCCAGGTAGCCAC
GCAAGCACATACACATACAGACATTTATAA
TCCACTCTATTATCCAATCTTCTGCTGATC
TGTCTACCTCGTAGGCTCCCTGGCTTAAGT
GCTAACTCACCAAAGTCCCACCTACCAAC
CCTCCGTCTTACCAACCCCTCCCGCCGCCCG
GCTGCCCTGCCCGCTATGCCGGCAGCATTG
CTAGCCACACAGCAAGCATCAGGGCTGCG
TCAACGCACGCTCCGTCGGCCGGGCCGCTC
GTCGGTGCAGGGGGAGCGAGGGTAG
GCATGTGGGGTGGATCGCGCTTGGACTCCT
CGGCTGATTGCTGACCGAGCCGTAGAATG
ATGCTCAGAAGGAGATCGAGATAGACACGA
TACTTATCAGTCTGTGTATGTACGTTCGT
CCGTGCGTGGTAGGTTGGTCGATCGATTG
ATCTACGTTAATCCCACCTGCGCGTGAC
ATAATGAATTACCCGCCGCCACTGTGCTG
CGAAACCCAGTTACTCAGTTAATCCGACTA

TGCCACGGTACAAATATCCGGGGTCATC
CGACTTGCAAATGAATCTAAAGCGCTACGT
TATTGTAAGATCGTAATTAACGAAGCGGTC
GTTAATTAACTGAGGTGCAGATGAATACAT
TTAAACCATGCAGTTATTCATCAGTCGCATC
GCAAACCTGTAGACGCTGAATATTAGGTATG
ATTAATGATACCGTGATGACAATTACGTGT
TTAAGCGCAATTAAATTCTGGTAGCGTTATGC
CTGTCAGGCGGTCTACAACTAGGTTCGA
TCCTTACGACTGGAAGATGGCTCTACACAC
GGACCCCCAAACCAATTATAGTTACCTAGT
CCTTAAAAACCATACTAGTTGGCTTATTG
ATACTAAGACTAAGCTTACGTCCTGACTCGC
GATTAATGGACACACGTTCTGACAAGCTC
CTCGGGGGCCATATATATGCCTGACGCCAG
AAACTGGTCTCATTCTCGATATGAAGCGACC
CAAAGCGCGGTGTATCGTTGTCGAATCCAA
CTAAGATGCATCGCGCGCGCGGATCAATC
TTACGAGACTCAGGTACTAGTGGTATCGTG
GCTGCCTTGTGACGCTTAAATCGTACTTCGT
CGCGATTGATTGTATTATAAACAAATCAGCAA
ATTAATCGATGGCGGACTTTATAAAGCTAA
ACTACGCCTTAAGTTACGCGCTGTGAGCA
GCTGAGGCCGGTCTTAAGTTCCATACATT
CTATCAATAGCGCTTCTGCCTAGGTATGG
GCTCTAGGGCTATCTGCTAAAGTTGACTCA
GAGAGAATTACCTCGGAATAAAACAACACG
CGGCAGTCAGATTTGTCACTATTTTACGT
AACTAGGGTGATCTCCCGGAATGTCAACTCC
GGGCCCCCACACGATGGTGGAGATCTCCTC
GCCCGTGGCTTCTGGACTAGACGTTAGGG
CATGCACATACGTTGACGAAATTGTTACGCC

GAGACGATAGAATTATAACCTTCCACCAT
CTAGTATGAGGGATTCATACGCTGCCCTCT
CCTAATAGGAACGTACACTAAATTAAATTGCC
GTGCTACCAATGCGACTACTTGGGATAAC
GGCCTGCGGTTGTCGTCGGGTGAACATATCC
TATCGTTGACTCTATAGCAAGGCTTATCGT
GCTAACTAATTACATAGTAGGACTATGCC
ACACGGGATGCACATACCCGACTATCGGGT
CCCAGAGACTACGTTGAGGAAAGCCAGGCT
TAGTTTACACATTAACCGATGGCGTGACGG
GGACTTTGTCGTCGGTACATAATCGTCAGG
TCATCAATTCCCTGCTGATATGGCGAAATTGC
TGAGTATCTCTATGGACTAACAACTGCTAGG
TGCTCTGGAGCCGACCGCCCGACATACAA
GATAGACACGTCTAACACAGCTCGTTTCATC
AACACCATCGTGCATGCCGATCGACGTGGC
ACAAACAAATTGAATAGAAGGCATACTATAT
CGTCTACTTGGTATGGGGCACCTGCCGTC
CAAAACCGTTGAAAAAGATCTGTTCTAA
TTCATCGTCAGTCGATTGAAATTCTCTCCC
CATACGCATGGACGCAATAAGTATCGATTG
GACACCTCCTCCCAGGTTCAATGTGAAGTG
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ATGCAGTCTCCCTGCTTAATCTCGTTGGGT
ACAGCTGAAATGCAGTCAGGCGCGGATGGG
GGCCCTCACGGATATGGTGATAATGTT
ACTAGCTTACACGTTCTAGCAGAATTGCG
AAATGACGATAGCCTCCACGCATATGTCCT
TGCCTCTCACATCCGAATTGGCGATGGATG
TCTCTAAATGAATTCTTATGGTCGCGACTTT
AACGCTTCCAAGATAACAAACAGATGGTGCT
CCTGAATCACATCTCCTTGATCTTGACATG

GTTCCACCCTGTTCCCCGGGCCAACCGTT
AAGCCTTACTATGTGATTGACCTAATATGG
ATAGTCCATCCGGCCATCCGTGTACAATAAT
CCACAGACTCTGTAATTAGAATTACATGCA
CTCCTCTCATCGTATCGGCCTAATGCTAGG
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AGAGTTATCAACAGGATCTCGGAATTCCCG
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GCTGCTGCCGTCTCGCGCCGGAACGCG
CTTCCAAATTCTCCCTACTAACGCATGCTGA
TGCACCATTGGAGCATTCTGGATGGCGT

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ACGCGATCAAGGACTGCCAGTGGTCTACT
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CTGCGAAATAGAACTAATTCAATTGCTTATC
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GATGCCTGGATAAAATTATCGCCTATGTCC
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CATTCGTGGTCGCGTTATGCCACTGAGTAA
CAAGTGATGTCCAGTGTCTAATACGACCGC
TCGGGTCGATGGTCAAGCGGCACAGTGAC
ATTAACCTTGCTTCACATTGAACAAATTCT
CCCACTTCAGCACATGTACCCCTGCTGCA
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ATAAAATACGTGGCGACCCACCCAAACATCC
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GTGGGGGTGATTAATGGTGAGACGTG
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GGTCATATACGCAAACACAACAGTAAGTAG
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CATCCGGTCCAATGCCGAACCGTCACG
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ATCTAGTATGTATTAGGTGGGCACCGCGGT
ACAGCATGGACAGGGCCTCACGGACACAA
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TAACTTCCCTCCGTCTCATTACTTATGCG
GGCTTCATCGCGGTTACCGGCTGGTAAGAT
ACGTAAGCTACACTAGTAAGCATACTGCAG
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CGGGCATCGCGACCGATAACTGCAGATCA
TGGAATGACCGCTCTACGTGGATTAACTC
GGGTGGCCCTATAGATAAATATTCTTACAC
CGCCCTGGATATATAGGCCGTAGCACGT
TTATGTCCTAGTACGCAGTACGCGCCTATTA
ATATAACAGCTGTCAGTAAGGGTCCAGAATT

CTAGGGCCGATGAATTACAAGCAGGTGAAT
AGATACGATTGGGATATTATCACAACAACTC
GCGAATGGATTATCAGTACGAGCCACGGCC
CAGCACATTATTCACCAACGGGATTAGGTG
ACGCCAGTGCCTGCTGCTACTACAATGCAT
CGCGGGTGTGACGGTTAAGGTAGCTCGG
GCGCGATAGATGATACTGGCCCGAGACCA
GTTTCTCTATATTAACCTAGTAAGACAGGCC
TGGCCCGGAAACCCTTCTGTACCCCGACC
TAGTATAAGACTACTGGGCCGCTAGCGGAC
TATTGACAAATCGCGCGTAGAAAATGCCTG
GGCCGTCTGCCGTGGTTCTTAGCTATA
CCTTGTAAATTAAACTGGACCAACCACAGT
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CAGCACCAAGCTGTATCTGATGCCTGGTCC
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CCAGCGTTGCCATGCCTTCGCTAGTC
CCCTCTGGTCCTATACCTGGTCCCCCGAG
CGGGGGCCAACACACACGCTGCTCTCAAAG
CTGGTTCAAGGAGCGCTGGACCCCTCCAAGT
CTCTAATGCAGTCTCTAGTTGAGATTACTG
GAGCCATGCTCCCTCTTATGACAACGTGAG
GTTATGTTAGCCTGGAGCTTAGATAACCTCT
CACCGGCCCTGACGTTCTATTGTAGTGGAA
CTACATTCCCGTCCCACGATAACTGACGTC
GTACTCGCGTGGAACACTAGTACCGTCCGA

CACCGGCGGATGTCTTAGTTAGTGGTACT
TGTGCCCTCCAACAAAAGAAGACGTCTC
AATAGCGTGGTACCGTTTCCGTCTACTC
TCACGGAGATCACTATGTAGTTCAGCGTC
AGGGTGTCTTAAAACATAGAATCCGTTAG
GAGGTTAGGGGCCCGTCCCTCTCAC
GACGAAATAATAATAGGGGGAGCTCGGA
CCCGTCCGTCATACCAAGAGAACTAAGGGC
TGGGGGAGGATTAGACCGTCCATCCTGTCA
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CCATCCCAGCGAAAAGTCTATCCTCATCCTG
GGGGTCTGAAAACCATCCTCTGTCTGAGA
GTATGTTGAGGAGCAGGGATGATGGCGACC
CTCCCCAACGGGGCCCTGGTCCGCCTA
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GCTTATTTCCATAGGGTTTGCTCCGGACC
ATCCGGTCGTGTAGCGCGATTGACTTGCCG
GGTTGTGTCCCCGTATCCAGGTACGACCT
CATGGGAAACTAGTGGCTGTCCGGCAGTAT
CCTGGTACGCACCTCATGTGGTATGCGTGG
CTGTTGGTCCGTATATGGACCTATATGGA
TCGAAGC (SEQ ID NO: 7)

JPEG image of Indian Flag

File Size = 1981 Bytes

DNA bases = 7924

After page 13, last line, delete the present Sequence Listing in entirety and replace with the Sequence Listing attached hereto.